

XXIV.—Notes on the Ornithology of Ceylon, collected during an eight years' residence in the Island. By EDGAR LEOPOLD LAYARD, F.Z.S., C.M.E.S. &c.

[Continued from p. 218.]

158. PLOCEUS PHILIPPINUS, Linn. *Tokanam cooroovi*, Mal.; lit. Basket-maker Bird. *Tatteh cooroola*, Cing.

Scattered pretty generally throughout the island and migratory. It breeds in June, fabricating hanging nests, which are too well known to the readers of this periodical to need description. I should observe, however, that the male also has a nest for himself which is similar to that used for breeding in, except that it has no gallery, and the chamber that contains the eggs in the one has no bottom in the other, so that the droppings of the bird, which always sits with its head towards the opening which replaces the gallery, fall through to the ground. Here the male bird rests at night, or shelters himself by day from the sun and wind, while he sings to his assiduous partner on the eggs.

The natives all tell me that the male bird conveys fireflies to its nest and sticks them to the side by means of mud for the purpose of illuminating its dwellings. I cannot say that I ever saw this substitute for candle, but I have never found the nest of the male bird without observing a patch of mud on each side of the perch on which the bird sits. It is clearly not placed there to strengthen the structure; can it be for the purpose of sharpening its bill? and may not the husks of seeds, and perhaps the wing-cases of a stray beetle left sticking upon it, have given rise to the idea which the natives entertain?

The bird feeds on seeds of various kind, associates in flocks, and builds in companies on palm and other trees or bushes indiscriminately. The eggs are from two to four in number, and pure white. Axis 8 lines, diam. 6 lines.

Dr. Kelaart includes *P. Bengalensis* in his list, but I think he has wrongly identified the species, the nidification of which is so peculiar that he would have noticed it. Can he have seen

159. PLOCEUS MANYAR, Horsf.,

which I found replacing *P. Philippinus* in the neighbourhood of Tangalle? If so, the species probably extends round to Trincomalee, and occupies the east of the island, while *Philippinus* takes the west.

I procured *Manyar* in April, devouring small seeds on the ground, and keeping to the neighbourhood of low bushes in the uncultivated districts. They congregated in small flocks.

160. *AMADINA UNDULATA*, Lath.
 161. *AMADINA MALABARICA*, Linn.
 162. *AMADINA MALACCA*, Linn.
 163. *AMADINA STRIATA*, Lath.
 164. *AMADINA RUBRONIGRA*, Hodgs.
 165. *AMADINA PECTORALIS*, Jerd. *Tinna cooroovi*, Mal., from their devouring *Tinna*, a native millet. *Wie-cooroola*, Cing.; lit. Paddy Bird. These names apply to the whole group of these birds.

These little birds are found in great numbers and in various localities. *Pectoralis* is confined to the hilly zone. Dr. Kélaart found it at Nuwera Elia, and I procured it at Gillymalle. *Rubronigra* Dr. Kélaart does not appear to have seen, and I only found it about Galle. *Malacca* I only noticed at Jaffna and about the peninsula. The rest are universally distributed. They all frequent the fields of paddy and fine grain, upon which they feed; and they breed in trees or high bushes in the vicinity. *M. undulata* breeds in companies, often forming thirty or forty nests in one tree, and in some instances I have found one structure containing several nests; but single nests often consist of a mass of straw and feathers larger than a man's head; in the centre of this is a small passage into the interior, which is thickly lined with soft feathers. The eggs are from three to five in number, and pure white. Axis 7 lines, diam. 6 lines barely. The eggs of *M. Malacca* are—axis $6\frac{1}{2}$ lines, diam. 5 lines barely.

The natives keep large numbers in cages and fatten them to be used as medicine in pulmonary complaints; they catch them in horse-hair nooses.

166. *PASSER INDICUS*, Jard. & Selby. *Gek cooroola*, Cing.; lit. House Bird, from building about houses.

The Indian sparrow is certainly distinct from our European bird, though its note is similar, and it lives about the habitations of men; its eggs also run through as many varieties, from an almost spotless white to the darkest mottled brown. Their length is 9 lines, diam. 6 lines.

The natives are much attached to this bird, and to attract it to their dwellings hang on a peg in the verandah a chatty with a hole broken in the bottom; this is soon selected by a pair of sparrows for their nesting place, and I have reason to know that the same pair will return to the spot year after year, and rear their callow nestlings undisturbed by the presence of the inmates of the dwelling.

167. ALAUDA GULGULA, Frank. *Poolloo*, Mal.; lit. "Wormer," from feeding on worms.

This is the "skylark" of Europeans, and is very abundant in all open lands whether pasture or ploughed; it is also found in the sandy plains of the northern, and among the terraced fields of the central province. It sings sweetly enough, but does not mount to the altitude of our English species. For its nest it selects some depression in the soil which it lines with fine grasses, and in it deposits from three to five eggs of a brownish gray colour, profusely streaked and mottled. Axis 9 lines, diam. 7 lines. It breeds in April. Dr. Kelaart introduces this species into his catalogue on the authority of Mr. Blyth—and

168. ALAUDA MALABARICA, Scop.,

on his own. Has he not mistaken *A. gulgula*, or *Mirafra affinis* (which he excludes altogether), for *A. Malabarica*? I have shot several hundred larks, but never found a single specimen of *A. Malabarica*, specimens of which I had from Mr. Blyth for identification. Dr. Kelaart does not inform us in his 'Prodromus' whence his specimens were obtained, and as the various species of this genus are very hard to distinguish without a thorough knowledge of them all, I cannot help thinking that my surmise is correct.

169. PYRRHULAUDA GRISEA, Scop.

I have only met with this species in the northern and eastern parts of the island; when on the open lands it is very abundant, being often seen in flocks of fifty or sixty individuals.

They are fond of dusting themselves on roads, and lie so close that one is frequently within a step of treading on them before they rise. I believe they are migratory, at least I never could find any breeding with us, and I have seen flocks careering from the direction of the continent when I have been out at sea dredging.

170. MIRAFRA AFFINIS, Jerd.

This species is abundant about Tangalle, and I have procured it at Pt. Pedro. I never saw it in the hills, nor does Dr. Kelaart notice it, so I presume it is confined to the low country; it is not however easily distinguishable from our other larks or pipits until taken in the hand; it may consequently have been overlooked. It has one habit however by which I always distinguished it when alive; on being flushed it soars up uttering a pleasing song, and wings its way towards some tree on to which it descends, its legs pendant and wings fluttering rapidly, and singing the while with all its little might; the instant however it

touches its perch, always the highest naked branch, its song ceases, and it stands on the look-out ready for flight on the least alarm.

171. BUCEROS GINGALENSIS, Shaw. *Kandatta*, Cing.

The lesser "Horn-bill" is common in the Wanny about Anarajahpoora and in the Mookalane jungles of the southern province. It feeds on the tops of the loftiest trees upon fruits and berries, which it swallows whole.

It is a wary and shy bird, and although its presence is often revealed by its loud harsh call, it rarely falls before the hunter's gun, and the best way to procure it is to lie concealed near a tree in fruit, if it be such it feeds upon.

The irides are reddish, and when partly hidden by the long stiff black eyelashes have a very peculiar appearance.

In some specimens the bill is white, with a black patch extending from the naked space round the eye about three-fourths of an inch along the lower half of the upper mandible: the bill $3\frac{5}{8}$ in. long. The three outer tail-feathers are white, the fourth half black from the quill, the fifth black. The head has a rufous tinge.

In other specimens the head wants the rufous tinge, the first tail-feather is white with the outer shaft black up two-thirds of its length, and slightly tinged up one-third of the inner web; second and third feathers black on both sides up two-thirds of their length; fourth black up to an inch from the top; fifth black altogether.

Bill $2\frac{1}{2}$ in. long and black, with a white patch on the upper mandible about $1\frac{1}{2}$ inch long, beginning about half an inch from the base.

This *species*? is found in the southern province about the base of the hills; the former in the Anarajahpoora Wanny.

172. BUCEROS MALABARICA, Lath.

B. Pica, Scop.; *B. violaceus*, Wagl.; *B. intermedius*, Blyth. *Errana-chundoo-cooroovi*, Mal.; lit. Double-billed bird. *Atta-kandatta*, Cing.; lit. Bone (*atta*) Kandatta, from the bony structure of its bill.

Not so generally distributed as the preceding, though enjoying as wide a range. I have seen it at Tangalle and near Pt. Pedro. It generally flies in large flocks, and seeks much of its subsistence on the ground, to which I never saw *B. Gingalensis* resort. In such situations I never could detect what it sought, but on trees it feeds upon berries and fruits. To procure the latter, when attached to a branch, it resorts to an odd expedient—the

coveted morsel is seized in its powerful bill, and the bird throws itself from its perch, twisting and flapping its wings until the fruit is detached; on this the wings are extended, the descent arrested, and the bird regains its footing. The head is now thrown back and the food allowed to fall into the throat and swallowed without mastication.

A live bird which I had for some time in my possession used its bill for the purpose of recovering its perch as a parrot would do, with this exception, that the *Buceros* employed the whole of the bill, hooking on by the *under side* of the lower mandible, while the parrot uses the upper mandible.

I have been credibly informed, that during the season of incubation the male bird encloses the female in the hollow tree selected for the reception of the nest with a wall of mud, as a defence against the monkey tribes, who certainly would need more than ordinary courage to attack a fortress defended by such a formidable weapon as the powerful bill of the bird. The cock bird assiduously provides for his imprisoned partner, feeding her through an aperture left for the purpose, and when the young are excluded breaks down the wall and sets her free, to assist him in satisfying the increased demand upon his parental energies.

As I have rigorously rejected from this list all species that I have not personally identified, and have only included those catalogued by Dr. Kelaart in his 'Prodromus,' in order to give my idea of their authenticity, I do not introduce *Buceros albirostris*, Shaw, but I may say I feel confident that this or an allied species exists in the mountains. I have seen it on two occasions, and Muttu came in full of a new Kandatta which he had seen in the Mookalane while I lay ill at Gillymalle. His description tallied precisely with what I had myself witnessed, and my idea is that the bird was *B. albirostris*, specimens of which I received from Mr. Blyth.

173. LORICULUS ASIATICUS, Lath. *Gira malitchia*, Cing.; and *Pol-girawa*, Flower Parrot.

Kandy, Putlam, Caltura, Galle, Hambantotte, and Gillymalle are the various localities where I have most plentifully procured this pretty little parrakeet. At Gillymalle they were in such abundance that the flowering trees were literally alive with them; they clung to the bright scarlet flowers head downwards, or scrambled from branch to branch, while the forest echoed with their bickerings. They bit off the leaves (which fell like scarlet snow upon the ground) to get at the calyx, and when this dainty morsel was devoured they flew off to the banana trees, down the broad leaves

of which they slid and fastened upon the ripening clusters of fruit or the pendant heart-shaped flower.

174. PALÆORNIS ALEXANDRI, Linn. *Laboo girawa*, Cing.

This, the largest of our parrakeets, is found in countless thousands at Batticaloa, nestling in the cocoa-nut trees and resorting to them by night in vast flocks. I procured a specimen or two near Matelle in the central province, where I also procured all our other parrots, and I shot a single bird at Gillymalle.

The natives tell me they breed in hollow trees and lay two round white eggs. The young are much sought after to rear as pets, and they are taught to speak many native words with great distinctness.

175. PALÆORNIS TORQUATUS, Briss. *Rana girawa*, Cing.
Killy, Mal.

Exceedingly abundant at Chilaw on the western coast, and northward to Jaffna and round by Mulletivoe to Trincomalie on the east coast, and in the interior of the island likewise. At Chilaw I have seen it in such vast flights, coming to roost in the cocoa-nut trees which overhang the native bazaar, that their noise quite drowned the babel of native tongues engaged in bargaining for the evening provisions.

Hearing of the swarms which resorted to the spot, I posted myself on a bridge some half a mile away, and attempted to count the flocks that came from one direction, eastward, over the jungle; about five o'clock in the afternoon straggling bodies began to wing their way homeward, but many of them came back again to pick up the scattered grains left on the fields near the village; about half-past five however the tide fairly set in, and I soon found I had no flocks to count—it was one living screaming stream: some high in air winged their way till over their homes, when with a scream they suddenly dived downwards with many evolutions until on a level with the trees; others flew along the ground rapid and noiselessly, now darting under the pendant boughs of some mango or other solitary tree, now skimming over the bridge close to my face with the rapidity of thought, their brilliant green plumage shining in the setting sunlight with a lovely lustre.

I waited at this spot till the evening closed in, and then took my gun and went to the cocoa-nut tope which covered the bazaar. I could hear, though from the darkness I could not distinguish, the birds fighting for their perches, and on firing a shot they rose with a noise like the rushing of a mighty wind, but soon settled again, and such a din commenced as I shall never

forget: the shrill screams of the birds, the fluttering of wings innumerable, and the rustling of the glazed leaves of the cocoa-nut trees, mingled with the gabbling of the natives below, quite stunned me, and I was glad to escape to the path by the river's bank which led to the miserable Government Rest House where I was stopping, and where the roar of the breaking surf dispelled the noise which still rang in my ears.

P. torquatus breeds in hollow trees, making little or no nest, and laying three or sometimes four pure white eggs, weighing 11 3/4 grs. Axis 14 lines, diam. 11 lines. It feeds on grain of all kinds, fruits, chillies, plantains, &c.

It is easily domesticated, becomes very attached and familiar, and is usually seen in most native and European houses.

176. PALÆORNIS LAYARDI, Blyth.

Syn. *P. bitorquatus*? Kuhl.

Of this species Mr. Blyth writes*: "As the Society has now received this species from Ceylon, and as there were some Ceylon birds in the Mauritius collection presented by Mr. Earle, there can be little doubt that No. 8 A. is erroneously assigned to the Mauritius in p. 4." I tried for months to procure another specimen of this bird, but though I had several hundred parrots killed I could not find one. I hardly think it a good species, but time will show. It was shot at Pt. Pedro.

177. PALÆORNIS CALTHROPÆ, Layard, J. A. S. xxxii.

Alloo girawa, Cing.

My first acquaintance with this lovely bird was at Kandy, where I killed a male and female at one shot from a flock flying over my head; I took them for the common *P. torquatus* until I picked them up, and then great was my delight to find such an elegant new species. It proves to be the common parrakeet of the hilly zone, and I have traced it in all parts of it. It feeds on berries, and seeks them on the very summit of the trees. When a flock is occupied in feeding every bird is as silent as the grave, and so difficult are they then to be distinguished, that though I have sometimes marked a flock into a tree, I have stood for ten minutes and could not perceive a single bird, though aided by the keen eyes of my fidus Achates, Muttu, and perhaps three or four natives: suddenly with one consent away would go the whole flock with a scream which almost deafened one. The natives tell me it breeds in hollow trees and lays two white roundish eggs.

* Addenda to Appendix No. 3 of Catalogue of the Birds in the Museum of the Asiatic Society of Bengal.

178. PALÆORNIS CYANOCEPHALUS, L. *Malitchia* and *Battoo-girawa*, Cing.

Found throughout the island except in the northern province. It is very commonly seen in confinement in the native houses, and is easily domesticated. Nestles in hollow trees: eggs four, pure white and rounded.

[To be continued.]

XXV.—*Monograph of the British Graphideæ.*
By the Rev. W. A. LEIGHTON, B.A., F.B.S.E.

[Continued from p. 212.]

2. *Graphis*, Ach.

Apothecium lirellæform, immersed; perithecium carbonaceous, dimidiate or confined to the sides, the base being naked; disk canaliculate, surrounded with a proper margin and an accessory thalldal margin. Thallus crustaceous or membranaceous.

Name from *γραφίς*, a design or sketch.

1. *Graphis scripta*, Ach. Thallus thin, membranaceous, continuous, even; lirellæ emergent, slender, contracted here and there, extremities acuminate; proper margin thin, elevated, wavy and crisped; thalldal margin membranaceous; disk rimæform, naked; sporidia eight, in asci, oblong or oval, margined, containing 8-10 horizontal rows of subrotund, margined, yellow spores.

Lichen scriptus, (Linn.) Ach. Prodr. 25 (1798).

Opegrapha scripta, Ach. Meth. 30 (1803); Fries, L. Ref. 370 (in part); Hook. Br. Fl. 2. 147 (in part); Tayl. Fl. Hib. p. 2. 106 (in part); Bohler's Lich. Brit. no. 28!

Graphis scripta, Ach. L. Univ. 265 (1810).

— *scripta* α , Ach. Syn. 81 (1814); Spreng. Syst. Veg. 4. p. 1. 252 (in part).

— *pulverulenta*, α . *phlæodes*, Wallr. Crypt. Germ. 330 (in part) (1827).

PLATE VI. fig. 17. *a*, Vertical section of thallus and lirella; *b*, sporidia—all magnified in different degrees.

The following varieties are noticeable:—

a. diffusa. Lirellæ rather long, simple or with a single branch, variously curved and wavy, lying in all directions.

On oak. Sussex! *Mr. Borrer*. Cultra, Co. Down! Colin Glen, Belfast! *Mr. W. Thompson*.

Thallus thin, membranaceous, very pale whitish yellow or cream-colour, continuous and entire, or cracking, breaking up,